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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,859	08/06/2003	Yoshitaka Morimoto	2003_1044A	6547

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EXAMINER

PENG, KUO LIANG

ART UNIT PAPER NUMBER

1712

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/634,859

Applicant(s)

MORIMOTO ET AL.

Examiner

Kuo-Liang Peng

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/24/04 Response/amendment.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-23 and 27-35 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 and 30-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 21-23 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 2, 21 and 27-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/6/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election with traverse of Group I, Claims 1-7 and 21-29, in the response to restriction requirement/amendment filed on November 24, 2004 is acknowledged. Claims 1-4, 7 and 27-29 are amended. Claims 6 and 24-26 are deleted. Now, Claims 1-5, 7-23 and 27-35 are pending. The traversal is on the ground(s) that a) "However, although the silsesquioxane derivative may be prepared by reacting a silicon compound of Formula (1) with a tribromosilane containing a functional group X, in Applicants' opinion the silsesquioxane derivative cannot be prepared from a silicon compound of Formula (1) and a trialkoxysilane."; and b) "the Examiner states that Groups I and III are related as product and process of use. This seems inconsistency with item 3, where the Examiner characterized Group I as process of making.". This is not found persuasive because of the following reasons: For a), the trialkoxysilane being not able to be used for preparing the silsesquioxane derivative is merely Applicants' opinion. Especially, Lichtehhan867 (US 5 484 867) teaches the use of a corner-capping agent containing alkoxides as leaving groups. (col. 7, lines 49-52) In addition, Lichtehhan193 (US 2003/0055193) teaches the use of a corner-capping agent of alkoxysilanes. (Scheme 1) Nonetheless, as mentioned in the restriction requirement, the silsesquioxane derivative may be prepared by reacting a silicon

Art Unit: 1712

compound of Formula (1) with a tribromosilane containing a functional group X.

For b), note that Group III is a product that can be used in the process of Group I.

Therefore, Claims 8-20 and 30-35 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The requirement is still deemed proper and is therefore made FINAL.

2. Applicants should notice that the claim identifiers of Claims 8-20 and 30-35 are improper. They should be "Withdrawn".

Claim Objections

3. Claims 27-29 are objected to because of the following informalities:

In Claims 27-29 (second line from bottom), should "-haloester" be -- α -haloester -- as indicated in Claim 1?

Appropriate correction is required.

4. Claims 2, 21 and 27 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s)

Art Unit: 1712

to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

In Claim 2 (lines 4-6), R being alkenyls is not supported in Claim 1.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 7, 21-23 and 27-29 are rejected under 35 U.S.C. 102(a),(e) as being anticipated by Lichtenhan193 (US 2003/0055193).

Lichtenhan193 discloses a production process for a silsesquioxane derivative by silation of a POSS-Silanol, in the presence of a base MOH, with a silane coupling agent such as X_3SiY wherein Y can be a functional group-containing

Art Unit: 1712

radical and X can be -OH, halide, etc. ([0007], [0010] and Examples) The resulting silsesquioxane has a closed-cage structure as indicated in ([0007]) and further exemplified in Scheme 1 wherein the M in MOH can be lithium, sodium, potassium, etc. The halide can further be exemplified as chloride. ([0088]) Note that POSS-Silanolate of Formula (1) in the present invention is inherently generated in-situ when the POSS-Silanol is brought in contact with the base MOH.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5, 7, 21-23 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lichtenhan867 (US 5 484 867) in view of Lichtenhan193.

Lichtenhan867 discloses a production process for a silsesquioxane derivative by silation of $\text{Si}_7\text{R}_7\text{O}_9(\text{OA})_3$ with a compound of the formula M-Z wherein OA can be OH, M can be Si, Z is a functional group-containing radical. (col. 5, line 36 to

Art Unit: 1712

col. 7, line 52 and Examples) Lichtenhan867 is silent on the use of a base MOH for promoting the silation. However, Lichtenhan193 teaches a process of silation under basic condition by using a base MOH wherein M can be Li, Na, K, etc. The motivation of using the base MOH is to afford a simpler and more desirable process for the economic manufacture of the silsesquioxane derivative. ([0033]) In light of the benefit mentioned, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize Lichtenhan193's base MOH for promoting Lichtenhan867's silation process. Note that POSS-Silanonate of Formula (1) in the present invention is inherently generated in-situ when the $\text{Si}_7\text{R}_7\text{O}_9(\text{OH})_3$ is brought in contact with the base MOH.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Art Unit: 1712

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

klp

January 3, 2005

Kuo-Liang Peng
Primary Examiner
Art Unit 1712


KUO-LIANG PENG
PRIMARY EXAMINER